

Product Specification

Product Name: ESC

Product Model: ROCK 220A-M

Version: V2.0

Date: 2024-12-04

NanChang ChangKong Technology Co., Ltd

I. Purpose

This product specification for the product in the production, testing and sales of the chain of norms to follow.

II. Scope of application

Electronic speed controller for use with input voltage: 20-61V DC.

III. Technical parameters

Item	Requirements	Remarks
Support lithium battery	6-14S(no startup above 65V)	Factory Inspection Items
Continuous operating current	200A	Specific thermal conditions
Maximum operating current (3 sec)	220A	
Instantaneous operating current (1 sec.)	300A	
BEC Output Voltage	none	
Operating temperature	-20~+65°C	
Operating humidity	15%~85%RH	
Storage temperature	-10~+40°C	
Storage humidity	15%~65% RH	
Waterproof rating	IP55	
Standby power consumption	≤10mA@60V	Factory Inspection Items
Throttle travel range	1000-2000us(default value)	calibratable
Throttle calibration range	maximum throttle(1.6-2.4ms), minimum throttle(0.6-1.4ms)	
Maximum supported speed	125,000 rpm (electrical speed)	Mechanical RPM = Electrical RPM / Pole Pairs
Throttle Refresh Frequency	50-500Hz(Recommended 100-400Hz)	PWM low level>0.2ms
Starting Throttle Point	6.7%	
*Throttle response time	300ms(Default value, customizable)	Throttle from idle to max
temperature protection point	120°C	
Input Signal Level	3.3-5V	
ESC Weight	351g	±2g
Product Size	128*56*38mm	±0.1mm

* Throttle Response Time: When the ESC receives 10%~100% step throttle, the throttle reaches the maximum value within the specified time, but usually the motor speed lags behind the throttle by 100ms~150ms.

*Performance parameters can be customized according to customer needs, including but not limited to protection temperature, response time, etc.

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IV. Main material/part specifications

Item	Requirements	Remarks
Power Cord Specifications	10AWG	Factory Inspection Items
Power Cord Length	150±5mm	
Power Cord Color	Red(Positive) Black(Negative)	
Output Phase Cord Specifications	10AWG	
Output Phase Cord Length	100±5mm	
Signal Cord Specifications	UL1533-24AWG-Gray	
Signal Cord Length	550±5mm	
Data Feedback Cord Specifications	PVC Row Wire-30 cores-Black-Red-White	
Data Feedback Cord Length	80±5mm	
Case Material	Aerospace Aluminum Alloy Surface Anodizing Treatment	

V. Load test data (test conditions: ambient temperature 16 °C, supply voltage 48V, data for reference only)

Load Current	Thermal Conditions	Test Time	Starting Temperature	Test Results
100A	Shell uncovered, frontal wind speed 19m/s	7 min	26°C	Normal operation, MOS temperature 52°C
100A	Place in carton (20*19*5cm), no wind	7 min	22°C	Normal operation, MOS temperature 114°C

* Specific heat dissipation conditions (low ambient temperature, blowing air, auxiliary heat dissipation surface, feedback MOS temperature below 120 °C), can continue to run 200A, sustained high temperature operation will reduce the service life of the ESC, it is recommended that the actual application of the feedback MOS temperature of 105 °C or less.

VI. Structural dimensional drawings

